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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/554,599

**Applicant(s)**

KURT ET AL.

**Examiner**

ABU SHOLEMAN

**Art Unit**

4148

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This instant application having Application No. 10554599 filed on 10/27/2005 is presented for examination by the examiner.

***Oath/Declaration***

2. The applicants' oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in **37 C.F.R.1.63**.

***Priority***

3. As required by **M.P.E.P.201.14(c)**, acknowledgement is made of applicant's claim for priority based on applications filed on April 29, 2003 (EPO 2003-03300009.2).

***Drawings***

4. The drawings were received on 10/27/2005. These drawings are acceptable for examination purposes.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kikuchi** et al ( Patent Number: 6938267 B2 )(hereinafter **Kikuchi** ) in view of **Gotoh** et al ( Patent Number: 6278671 B1) ( hereinafter **Gotoh** ) and further in view of **Nagai** et al ( WO 00/67257)( hereinafter **Nagai**).

As per claim 1, **Kikuchi discloses** "a diffractive layer made of photopolymers, for delivering a spackle pattern when illuminated by a light source" as ( column 3, line 62-65, A light transmission layer is formed of mixture of Zinc sulfide and silicon oxide).

**Kikuchi** does not disclose "a spatial filtering layer including a binary mask made of a photosensitive material for delivering a filtered optical signal from the spackle pattern, said spatial filtering layer being aligned with respect to the diffractive layer, and a detection layer for transforming said filtered optical signal into an electrical signal, from which a cryptographic key is generated"

However, **Gotoh** discloses "a spatial filtering layer including a binary mask made of a photosensitive material , for delivering a filtered optical signal from the spackle pattern, said spatial filtering layer being aligned with respect to the diffractive layer" as ( column 2, line 25-35, a light source is made into a rectangular beam pattern by using a rectangular mask )

**Kikuchi and Gotoh** are analogous arts because they are the same field of endeavor of forming a light transmission layer of optical disk.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching a photopolymer composition layer of **Kikuchi** by including a beam pattern of a mask by light source that taught by **Gotoh** because it would provide a laser light from the light source of a rectangular beam pattern ( column 2, line 26-27).

**Further more, Nagai** discloses "a detection layer for transforming said filtered optical signal into an electrical signal" as (column 86 line 24-25 the optical pickup photo

electrically converts the entered reflected light into a reproduced electrical signal), from which a cryptographic key is generated" as ( page 87, line 1-5, the reproduced signal to the key information that key information generates a data of key ).

**Kikuchi**, and **Nagai** are analogous arts because they are the same field of endeavor of protecting copying optical disk.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching a beam pattern of photopolymer by light source of **Kikuchi** by including a conversion of optical signal to electrical signal that generate a key that taught by **Nagai** because it would provide a prevention of copying illegally from an optical disk (Page 1, line 13-14).

As per claim 2, **Kikuchi** discloses "Wherein the detection layer is made of a patterned photoelectric material (column 1, line 45-47, an optical disc substrate having an uneven pattern is formed by zinc sulfide and silicon oxide method).

As per claim 4, **Nagai discloses** "means for computing a cryptographic key from the electrical signal delivered by the detection layer" as (page 87, line 3-4, a key is generates from the inputted reproduced signal), and " means for decrypting encrypted data contained in the information carrier based on the cryptographic key (page 87, line 11-13, the cipher decoder decrypts the encrypted content using the decipher key including the inputted disk ID signal).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kikuchi** et al ( Patent Number: 6938267 B2 )(hereinafter Kikuchi ) in view of **Gotoh** et al ( Patent Number: 6278671 B1) ( hereinafter Gotoh ) and further in view of **Nagai** et al ( WO 00/67257)( hereinafter Nagai) and further in view of **Wu** et al ( patent Number: 6114090 ) ( hereinafter Wu).

As per claim 3, **Kikuchi, Gotoh and Nagai disclose** "An information carrier as claimed in claim 1" as (See rejection above claim 1), but do not disclose " a spacer for separating the diffractive layer from the spatial filtering layer, said spacer having a width which a large than the wavelength of the light source and smaller than the width of the diffractive layer"

However, **Wu** discloses " a spacer for separating the diffractive layer from the spatial filtering layer, said spacer having a width which a large than the wavelength of the light source and smaller than the width of the diffractive layer" as (column 9, line 13-14, a distance from off-contact mask to substrate layer is from 1 to 10 micrometers).

**Kikuchi and Wu** are analogous arts because they are the same field of endeavor of copy protection of optical disk.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching a beam pattern of photopolymer by light source and converting optical signal to electrical signal and generate a key of **Kikuchi in view of Gotoh and further in view of Nagai** by having distance between

layers that taught by **Wu** because it would provide higher intensity source of actinic radiation when there are a shorter wavelength between layers(column 7, line 53-59).

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kikuchi** et al ( Patent Number: 6938267 B2 )(hereinafter Kikuchi ) in view of **Gotoh** et al ( Patent Number: 6278671 B1) ( hereinafter Gotoh ) and further in view of **Nagai** et al ( WO 00/67257)( hereinafter Nagai) and further in view of **Jones** (WO 00/14734).

As per claim 8, **Kikuchi, Gotoh and Nagai disclose** "A device as claimed in claim 1" as ( see rejection about claim 2 ), but did not disclose "Wherein the detector array is made of a patterned photoelectric material" .

However, **Jones** discloses "Wherein the detector array is made of a patterned photoelectric material" as ( page 6 , line 17-19, The detector comprises a phototransistor or the like arranged to detect the reflected radiation and convert it to electrical output).

**Kikuchi, and Jones** are analogous arts because they are the same field of endeavor of protection of optical disk.

Therefor, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching a beam pattern of photopolymer by light source and converting optical signal to electrical signal and generate a key of **Kikuchi in view of Gotoh and further in view of Nagai** by including a phototransistor

detector that taught by **Jones** because it would provide for converting the reflected radiation in to electrical signals (page 6, line 14-15).

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kikuchi** et al ( Patent Number: 6938267 B2 )(hereinafter Kikuchi ) in view of **Gotoh** et al ( Patent Number: 6278671 B1) ( hereinafter Gotoh) and further in view of **Nagai** et al ( WO 00/67257)( hereinafter Nagai) and further in view of Owa et al ( patent number 5587984)( hereinafter Owa).

As per claim 10, Kikuchi, Gotoh and Nagai disclose " A method of manufacturing an information carrier as claimed in claim1" and " Illuminating at the same time said photopolymer layer so as to polymerize said diffractive structure , and a layer made of photosensitive material through the diffractive structure so as to form a spatial filter having a binary mask including activated and non activated areas , as activation of said photosensitive material being performed when a intensity of a speckle pattern delivered by the diffractive structure for a given wave front of the light source is higher than a predetermined threshold" as ( see rejection above claim 1 ),

Kikuchi, Gotoh and Nagai do not disclose "holographic exposing a layer of photopolymer so as to create a diffractive structure "

However, Owa discloses "holographic exposing a layer of photopolymer so as to create a diffractive structure" as (column 2, line 12-13, the hologram is recorded as a binary pattern with random distribution in the optical recording medium).



**Kikuchi and Owa** are analogous arts because they are the same field of endeavor of a method of manufacturing optical disk.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching of **Kikuchi, Gotoh and Nagai** by including the hologram pattern on optical disk that taught by **Owa** because it would make it difficult to track and copy an optical disk (column 2, line 56-57).

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kikuchi et al** (Patent Number: 6938267 B2) (hereinafter Kikuchi) in view of **Gotoh et al** (Patent Number: 6278671 B1) (hereinafter Gotoh).

As per claim 5, **Kikuchi discloses** "a diffractive layer made of photopolymers, for delivering a spackle pattern when illuminated by a light source" as ( column 3, line 62-65 , A light transmission layer is formed of mixture of Zinc sulfide and silicon oxide) and but , **Kikuchi does not specifically disclose** "a spatial filtering layer including a binary mask made of a photosensitive material , for delivering a filtered optical signal from the spackle pattern, said spatial filtering layer being aligned with respect to the diffractive layer".

However, Gotoh discloses "a spatial filtering layer including a binary mask made of a photosensitive material , for delivering a filtered optical signal from the spackle pattern, said spatial filtering layer being aligned with respect to the diffractive layer" as (

column 2, line 25-35, a light source is made into a rectangular beam pattern by using a rectangular mask ).

**Kikuchi and Gotoh** are analogous arts because they are the same field of endeavor of forming a light transmission layer of optical disk.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching a photopolymer composition layer of **Kikuchi** by including a beam pattern of a mask by light source that taught by **Gotoh** because it would provide a laser light from the light source of a rectangular beam pattern (column 2, line 26-27).

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kikuchi** et al ( Patent Number: 6938267 B2 )(hereinafter Kikuchi ) in view of **Gotoh** et al ( Patent Number: 6278671 B1) ( hereinafter Gotoh ) and further in view of **Wu** et al ( patent Number: 6114090 )( hearinafter Wu).

As per claim 6, Kikuchi and Gotoh disclose "An information carrier as claimed in claim 5" as (see rejection above claim 5) and They do not disclose "a spacer for separating the diffractive layer from the spatial filtering layer, said spacer having a width which a large than the wavelength of the light source and smaller than the width of the diffractive layer ".

However, Wu disclose "a spacer for separating the diffractive layer from the spatial filtering layer, said spacer having a width which a large than the wavelength of

the light source and smaller than the width of the diffractive layer" as (column 9, line 13-14, a distance from off-contact mask to substrate layer is from 1 to 10 micrometers).

**Kikuchi and Wu** are analogous arts because they are the same field of endeavor of copy protection of optical disk.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching a beam pattern of photopolymer by light source and converting optical signal to electrical signal and generate a key of **Kikuchi in view of Gotoh** by having distance between layers that taught by **Wu** because it would provide higher intensity source of actinic radiation when there are a shorter wavelength between layers (column 7, line 53-59).

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kikuchi et al** ( Patent Number: 6938267 B2 )(hereinafter Kikuchi ) in view of **Gotoh et al** ( Patent Number: 6278671 B1) ( hereinafter Gotoh ) and further in view of **Jones** ( WO 00/14734) and further in view of Nagai et al ( WO 00/67257) ( hereinafter Nagai).

As per claim 7, Kikuchi and Gotoh disclose "A device for reading an information carrier as claimed in claim 5" as (see rejection about claim 5) .Kikuchi and Gotoh do not disclose "a detector array for transforming the filtered optical signal into an electrical signal, means for computing a cryptographic key from said electrical signal, and means for decrypting encrypted data contained in the information carrier from the cryptographic key".

However, **Jones** discloses "a detector array for transforming the filtered optical signal into an electrical signal" as (Page 6, line 17-20, the detector will typically comprise a phototransistor or the like arranged to detect the reflected radiation and convert it to electrical output).

**Kikuchi and Jones** are analogous arts because they are the same field of endeavor of copy protraction of optically readable storage media.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching of **Kikuchi in view of Gotoh** by including the detector with phototransistor to convert the optical into electrical signal that taught by Jones because it would provide of reading data from optically readable storage media (Page 1, line 4-5).

Furthermore, **Nagai** disclose "means for computing a cryptographic key from said electrical signal " as (Page 87, line 3-4, a key is generates from the inputted reproduced signal), and " means for decrypting encrypted data contained in the information carrier based on the cryptographic key (Page 87, line 11-13, the cipher decoder decrypts the encrypted content using the decipher key including the inputted disk ID signal).

**Kikuchi and Nagai** are analogous arts because they are the same field of endeavor of optically readable data storage media.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching a beam pattern of photopolymer by light source and converting optical signal to electrical signal and generate a key of

**Kikuchi in view of Gotoh** by including the detector that converts the optical signal into electrical signal and a key is generated from a signal that taught by **Nagai** because it would prevent unjust digital copying from being performed from an optical disk (Page 1, line 13-14).

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones Gary (WO 00/14734) and further in view of (**Nagai** et al (WO 00/67257) (hereinafter Nagai).

As per claim 9, Jones discloses "A device for reading an information carrier comprising a diffractive layer for delivering a speckle pattern when illuminated by a light source" as ( column 2 line 5, the reflected radiation ) , " said device comprising : a spatial filter for delivering a filtered optical signal from the speckle pattern, said spatial filter including a binary mask made of a reversible photosensitive material such that said binary mask is created every time an information carrier is inserted into said device " as ( column 1, line 21-26, The detector is used to detect the reflected radiation from the phototransistor of a photosensitive material ) , " a detector array for transforming the filtered optical signal into an electrical signal" as ( column 2, line 26 , a detector convert the reflected radiation to electrical signal )

Jones does not disclose "means for computing a cryptographic key from the electrical signal delivered by the detection layer, and means for decrypting encrypted data contained in the information carrier based on the cryptographic key".

However, **Nagai** discloses "means for computing a cryptographic key from the electrical signal delivered by the detection layer" as (Page 87, line 3-4, a key is generated from the inputted reproduced signal), and " " means for decrypting encrypted data contained in the information carrier based on the cryptographic key (Page 87, line 11-13, the cipher decoder decrypts the encrypted content using the decipher key including the inputted disk ID signal).

**Jones and Nagai** are analogous arts because they are the same field of endeavor of reading of optically readable data storage media.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching of **Jones** by including of generating a key from electrical signal that taught **Nagai** because it would prevent the production of pirated version of optical disk (page 6, line 16-19).

### ***Conclusion***

14. The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See MPEP 707.05(c).
15. The following reference teaches execution of trial data.
  - US 6272224
  - US 3607272
  - US 6278671
  - US 5198911

16. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Abu Sholeman whose telephone number is ( 571)270-7314. the examiner can normally be reached on Monday to Friday 8:30 AM to 5.00PM.

If attempts to reach the above noted Examiner by telephone are un successful, the Examiner's supervisor, Thomas Pham, can be reached at the following telephone number ( 571)2272-3689.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from the either Private PAIR or public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pari-direct.uspto.gov>. Should your have questions on access to the Private PAIR system, contact the Electronic Business Center(EBC) at 866-217-9197(toll-free).

September 7, 2008

Abu Sholeman  
Examiner  
Art Unit 4148

/THOMAS K PHAM/

Supervisory Patent Examiner, Art Unit 4148

